

## **REMARKS/ARGUMENTS**

### **Claim Amendments**

By the present amendment, claim 1 has been amended to delete the phrase "one or more." This represents a clarifying amendment that does not alter the scope of the claim in any way.

Claim 4 has been withdrawn as being directed to non-elected subject matter.

The claim amendments have been made without prejudice and without acquiescing to any of the Examiner's objections. The Applicants submit that no new matter has been entered by the present amendment and entry of the amendments is respectfully requested.

The Official Action dated March 24, 2006 has been carefully considered. It is believed that the claims submitted herewith and the following comments represent a complete response to the Examiner's comments and place the present application in condition for allowance. Reconsideration is respectfully requested.

### **Restriction Requirement**

The Applicants note the Examiner's withdrawal of claim 4 as being directed to a non-elected species. The Applicants further note that in the previous Office Action dated December 5, 2005, the Examiner alleges that the species of claims 4 and 5 are distinct due to the distinct difference in chemical components from which the polyol silane is derived. The Applicants wish to point out that the species claimed in claim 5 are, with the exception of glycerol, representative examples of the broader classes of compounds claimed in claim 4, accordingly the Applicants traverse the Examiner's position that the species of claims 4 and 5 are distinct due to the distinct difference in chemical components. Regardless, the Applicants submit that, in light of the arguments and amendments submitted herewith, the generic claims 1-3 and 7-21 are allowable and therefore request that claim 4 be rejoined with the claims in the present application.

**35 U.S.C. §102(e)**

The Examiner has rejected claims 1-3, 5-13, 16-17 and 21 under 35 U.S.C. §102(e) as being anticipated by Zhang et al. (US Pub No. US2004/0249082, priority date August 23, 2003). The Applicants respectively traverse this rejection.

The Applicants have submitted herewith a Statutory Declaration under 37 CFR §1.132, declaring that any subject matter not claimed in Zhang et al., but that is claimed in the present application, is derived from the Applicants, therefore Zhang et al. is not an invention "by another" as required by 35 U.S.C. §102(e).

In light of the above, the Applicants request that the Examiner's rejection of claims 1-3, 5-13, 16-17 and 21 under 35 U.S.C. §102(e) be withdrawn.

**35 U.S.C. §102(e)**

The Examiner has rejected claims 1-3, 9, 11-17 and 21 under 35 U.S.C. §102(e) as being anticipated by Um et al. (US Pub No. US2003/0124371, priority date November 8, 2001). The Applicants respectively traverse this rejection.

**1. Summary of Um et al.**

Um et al. disclose a water-swellaable hydrophobic hydrogel and analytical devices incorporating these hydrogels. Um et al. also disclose methods of using the hydrogel to detect an analyte in a sample comprising contacting the analyte with an adsorbent biochip of this invention to allow capture of the analyte and detecting capture of the analyte by the biochip.

Um et al. teach an adsorbent chip which includes a substrate with a surface and an adsorbent layer attached to the surface. The adsorbent layer includes a hydrogel made of hydrophobic moieties and hydrophilic moieties. The hydrogel is water-swellaable and includes "binding functionalites" that can bind a target molecule (see

Paragraph 0172). Um et al. also teach a method for detecting an analyte or target molecule, and specifically at Paragraph 0020, lines 1-5, Um et al. teach:

In another aspect, this invention provides a method for detecting an analyte in a sample comprising contacting the analyte with an adsorbent biochip of this invention to allow capture of the analyte and detecting capture of the analyte by the adsorbent chip.

The Applicants submit that Um et al. do not teach the entrapment of two or more components of a protein based system within the hydrogel.

## **2. Um et al. does not teach a microarray comprising a matrix having two or more components**

The present invention relates to a protein microarray that is based on co-entrapment of *two or more components of a protein based system* within a biomolecule compatible matrix. While Um et al. teaches entrapment of biological molecules in a hydrogel derived matrix, the Applicant respectfully submits that *Um et al. does not teach or suggest a biomolecule-compatible microarray which co-entraps two or more components of a protein-based system* and therefore does not anticipate claim 1, or any of the claims dependent thereon, including claims 2-3, 9, 11-17 and 21.

In light of the above, the Applicants request that the Examiner's rejection of claims 1-3, 9, 11-17 and 21 under 35 U.S.C. §102(e) be withdrawn.

### **35 U.S.C. §102(e)**

The Examiner has rejected claims 1-3, 5-6, 16-17 and 21 under 35 U.S.C. §102(e) as being anticipated by Preininger (US Pub No. US2003/0040008, priority date April 12, 2000). The Applicants respectively traverse this rejection.

## **1. Summary of Preininger**

Preininger teaches a method for immobilizing an analyte on a solid surface, which is characterized by binding a cyclodextrin molecule having at least two functional

groups to a solid surface in manner that at least one functional group of the cyclodextrin molecule can still be covalently bound to an analyte and then covalently binding the analyte to the surface-bound cyclodextrin molecule. Preininger also relates to detecting and optionally isolating a ligand molecule from a sample. Specifically, Preininger discloses at Paragraph 0031, lines 3-11:

which method is characterized in that a sample containing the ligand molecule to be detected or isolated (or a sample likely to contain such a ligand molecule) is contacted with a conjugate according to the invention, the ligand molecule is specifically bound to the analyte, and this specific bond is verified by measures known per se, whereupon the ligand molecule is optionally separated from the conjugate and isolated.

The Examiner alleges that this reference teaches immobilizing or binding analytes such as DNA or enzymes to solid surfaces. Further, the Examiner alleges that Preininger teaches microarrays for immobilizing DNA, which therefore anticipates claims 1 and 21 of the present application. The Applicant respectfully disagrees.

**2. Preininger does not teach a microarray comprising a matrix having two or more components**

The present application relates to a protein microarray that is based on co-entrapment of *two or more components of a protein-based system* within a biomolecule compatible matrix. While Preininger does teach entrapment of biological molecules in a hydrogel derived matrix, the Applicant respectfully submits that Preininger does not teach or suggest a biomolecule-compatible microarray which co-entrap two or more components of a protein-based system. Accordingly, Preininger does not anticipate claim 1, or any of the claims dependent thereon, including claims 2-3, 5-6, 16-17 and 21.

In light of the above, the Applicants request that the Examiner's rejection of claims 1-3, 5-6, 16-17 and 21 under 35 U.S.C. §102(e) be withdrawn.

**35 U.S.C. §112**

The Examiner has rejected claims 1-3 and 5-21 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter. In particular, the Examiner objects to claim 1 because of the term "microarray comprising one or more spots".


The Applicants have amended claim 1 to delete the phrase "two or more". The Applicants submit that claim 1, and according claims 2-3 and 5-21, dependent thereon, are not indefinite and therefore comply with 35 U.S.C. §112, second paragraph

In light of the above amendment, the Applicants request that the Examiner's rejection of claims 1-3 and 5-21 under 35 U.S.C. §112, second paragraph be withdrawn.

In view of the foregoing comments and amendments, we respectfully submit that the application is in order for allowance and early indication of that effect is respectfully requested. Should the Examiner deem it beneficial to discuss the application in greater detail, the Examiner is invited to contact the undersigned by telephone at indicated number, at the Examiner's convenience.

Respectfully submitted,

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Encl.: Declaration under 37 CFR §1.132